
Streamflow and Groundwater Conditions in Rhode Island

August 13, 2020

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U.S. Geological Survey
New England Water Science Center



Table 2, Rhode Island Drought Indices and Phases

Drought Phase	Palmer Drought Index +	Crop Moisture Index	Precipitation +	Ground Water** +	Stream flow +	Reservoirs**
Normal	-1.0 to -1.99	0.0 to -1.0	Slightly Dry	1 month below normal 1 month below normal	2 consecutive months below normal	Reservoir levels at or near normal for the time of year
Advisory	-2.0 to -2.99	-1.0 to -1.9 Abnormally Dry	2 month cumulative below 65% of normal	At least 2 out of 3 months below normal	3 consecutive months below normal	Small index Reservoirs below normal
Watch	-3.0 to -3.99	-2.0 to -2.9 Excessively Dry	1 of the following criteria met: 3 month cum. <65% or 6 month cum. <70% or 12 month cum. <70%	4-5 consecutive months below normal	At least 4 out of 5 consecutive months below normal	Medium index Reservoirs below normal
Warning	-4.0 and below	> -2.9 Severely Dry	2 out of 3 of the above criteria met: 3 month cum. <65% and 6 month cum. <65% or 6 month cum. <65% and 12 month cum. <65% or 3 month cum. <65% and 12 month cum. <65%	6-7 consecutive months below normal observation wells recording monthly record lows	At least 6 out of 7 consecutive months below normal	Large index reservoirs below normal
Emergency	-4.0 and below	> -2.9 Severely dry	Same criteria as Warning and Previous month was Warning or Emergency	>7 months below normal Observation wells recording monthly record lows	>7 months below normal	Continuation of previous month's conditions

+ Major Hydrologic Indicators.

** Local triggers from the water system supply management plans will also be considered in a assessing drought phases on a regional basis. The WRB staff will review local plans and work with suppliers to coordinate regarding drought phases and to collect, review and report surface reservoir and ground water data.

"Normal" is defined as the statistical average of the data for the period of record. Percentages for precipitation are relative to normal.

Average Streamflow Conditions – April 2020

April 2020



Explanation - Percentile classes						
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

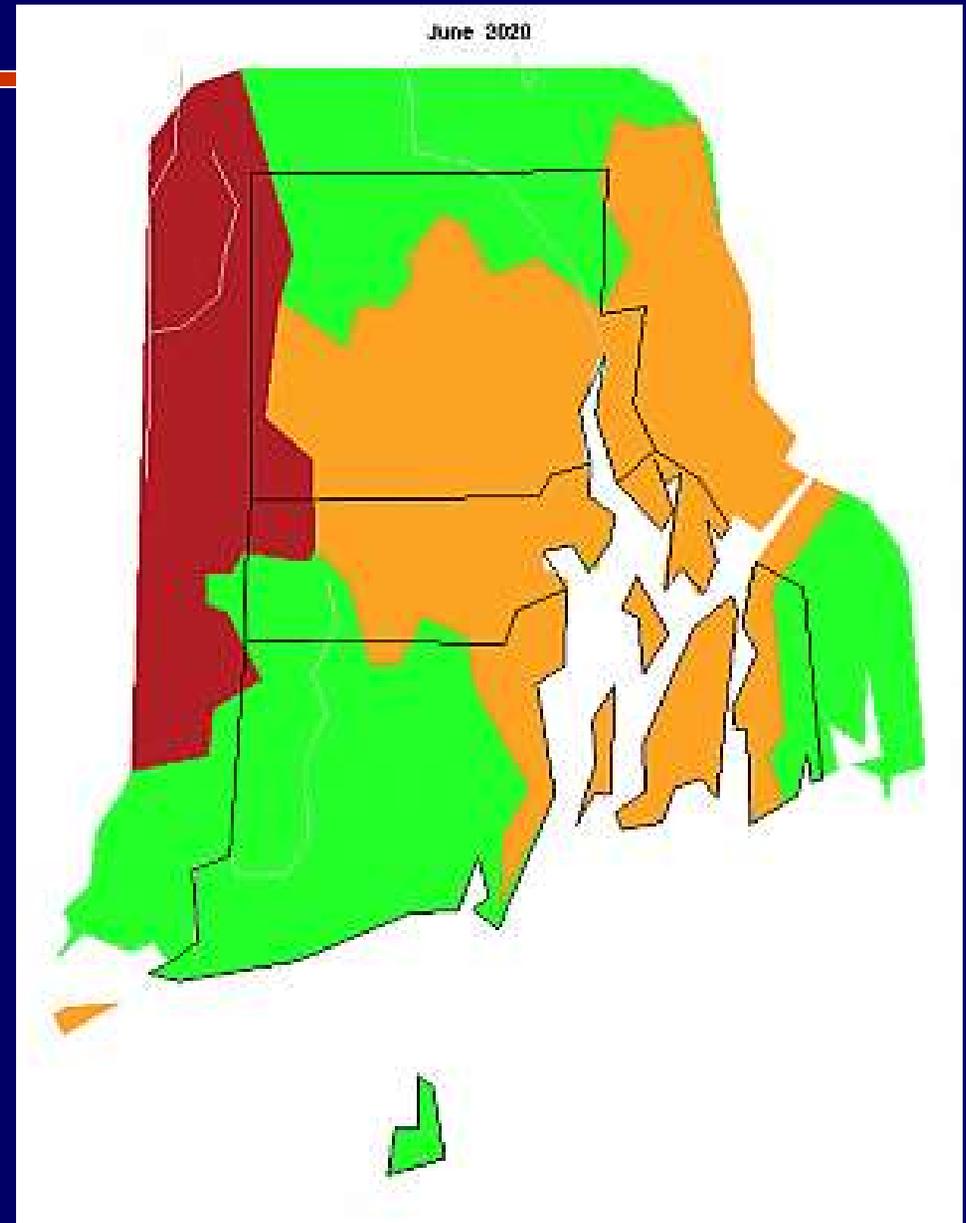
Average Streamflow Conditions – May 2020



Explanation - Percentile classes						
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

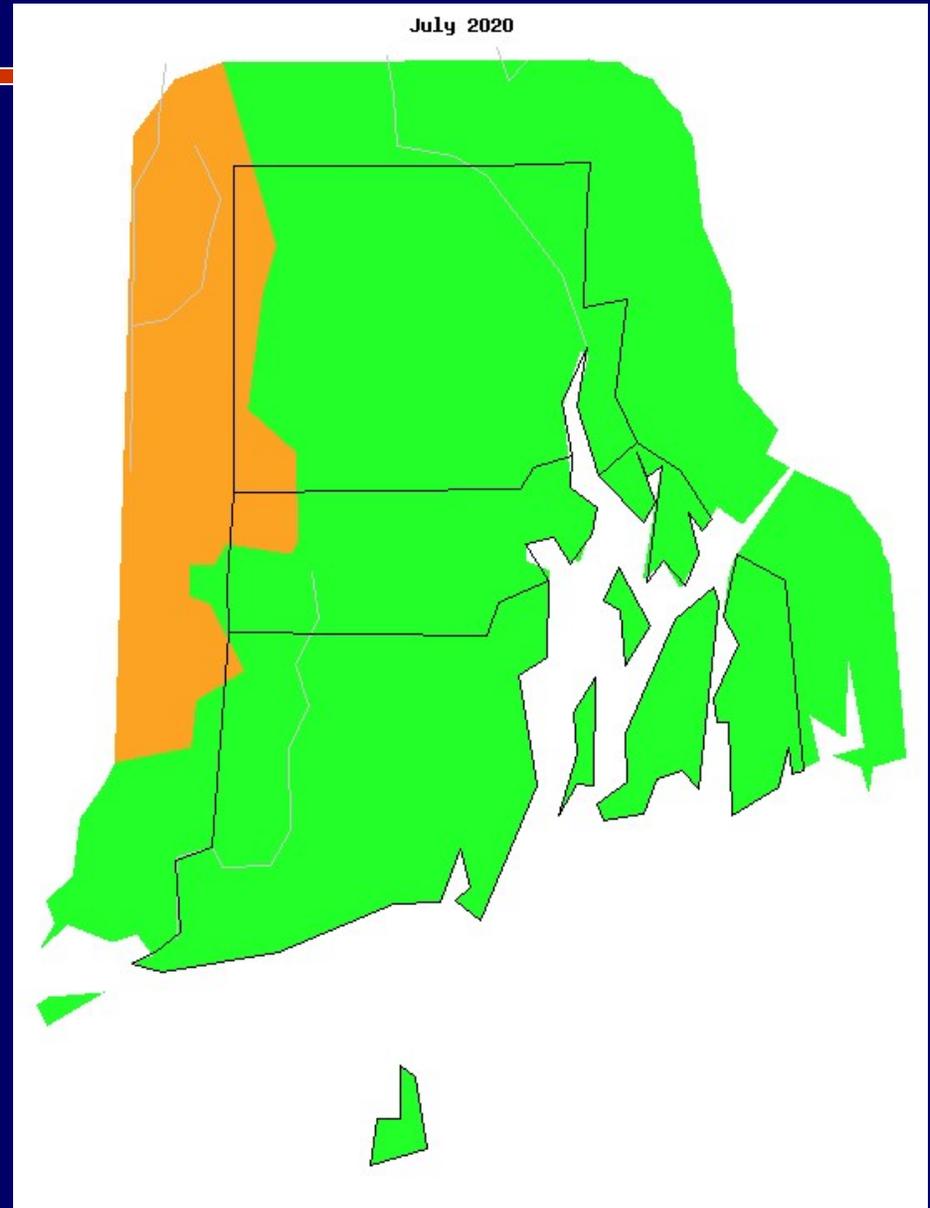


Average Streamflow Conditions – June 2020



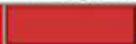
Explanation - Percentile classes						
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

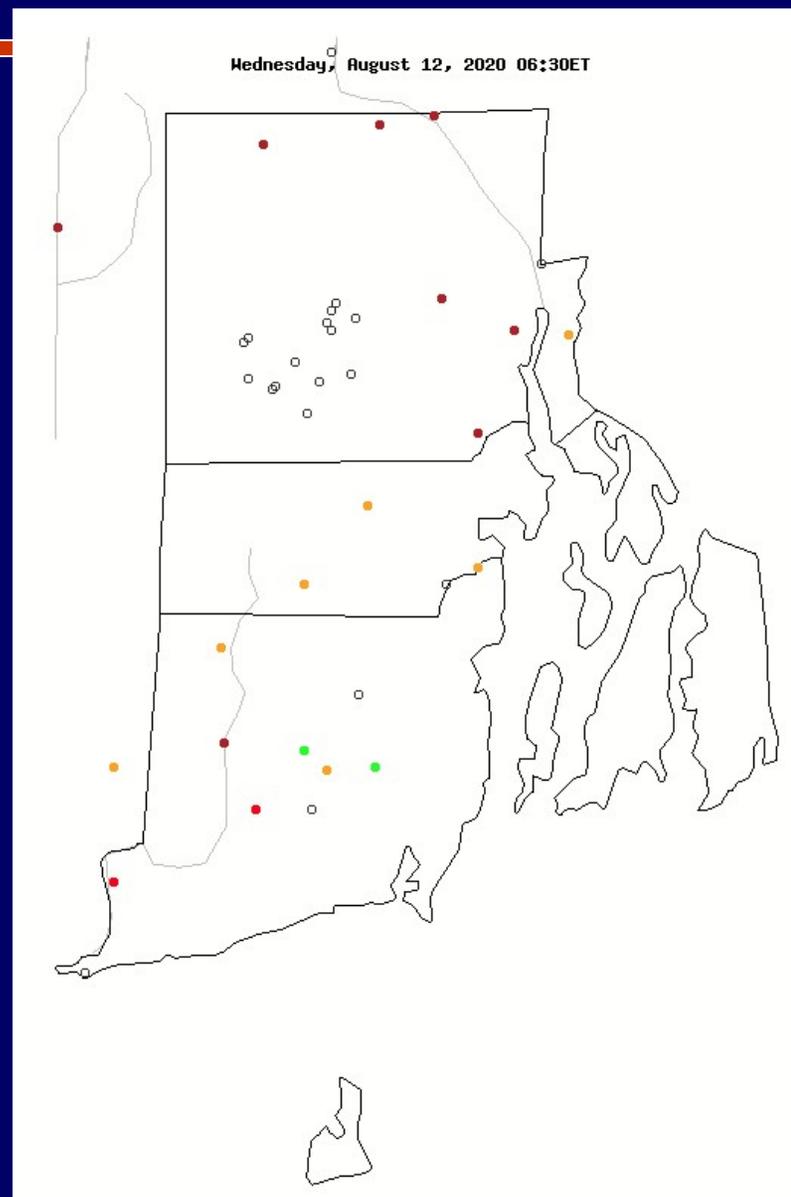
Average Streamflow Conditions – July 2020



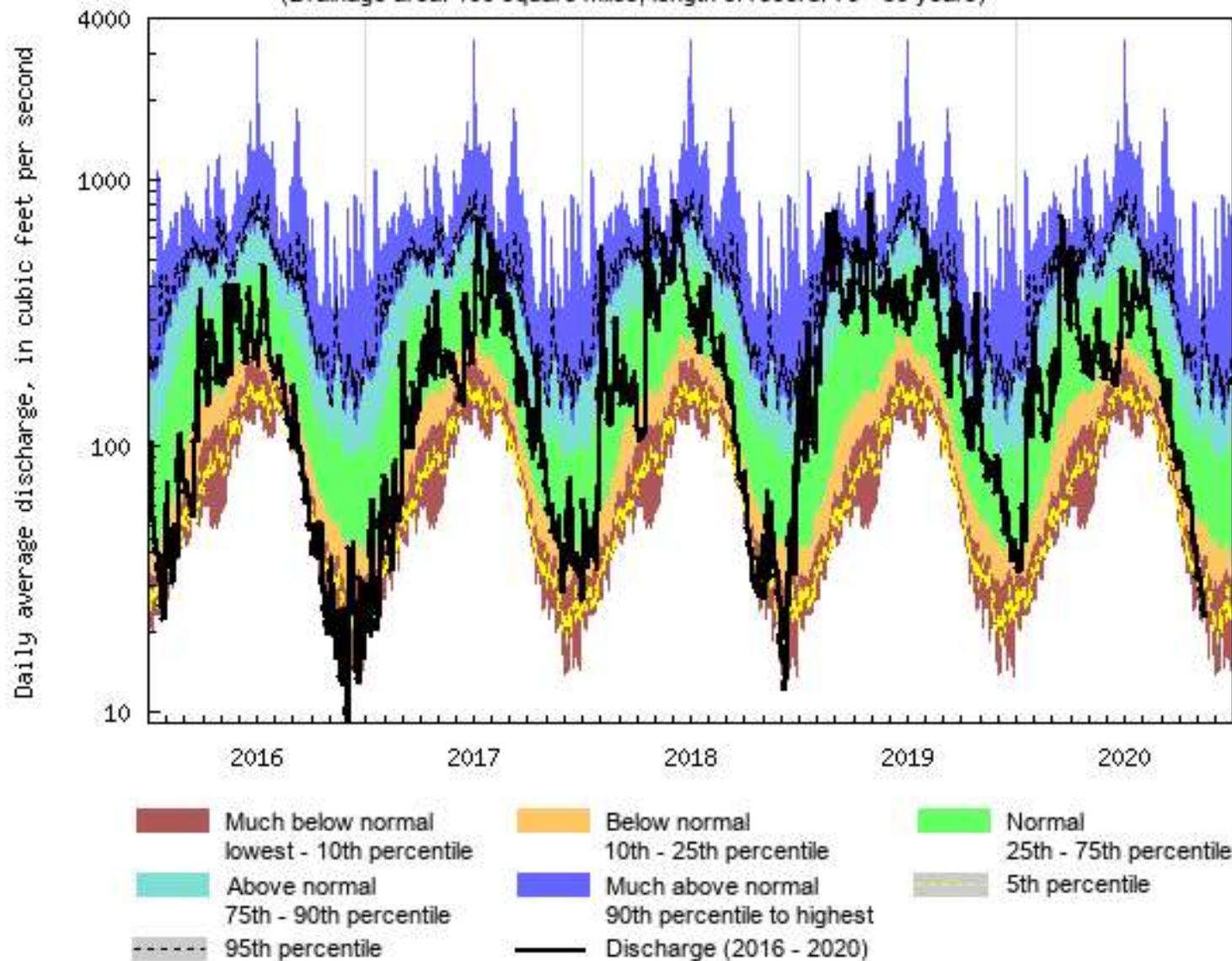
Explanation - Percentile classes						
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	

Current Streamflow Conditions – August 12, 2020

Explanation - Percentile classes							
							
Low	<10	10-24	25-75	76-90	>90	High	
	Much below normal	Below normal	Normal	Above normal	Much above normal		



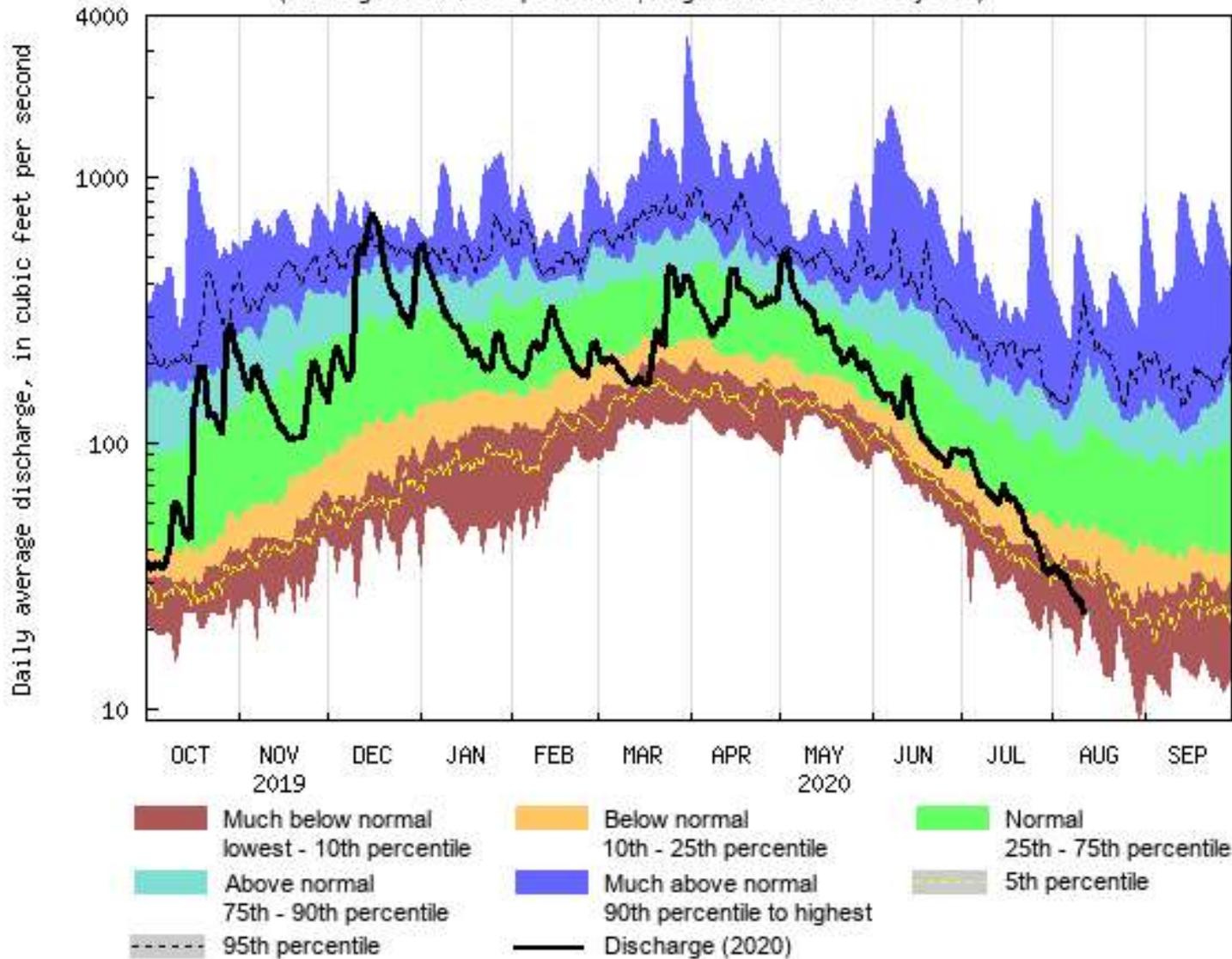
USGS 01117500 PAWCATUCK RIVER AT WOOD RIVER JUNCTION, RI
(Drainage area: 100 square miles, length of record: 79 - 80 years)



USGS WaterWatch

Last updated: 2020-08-12

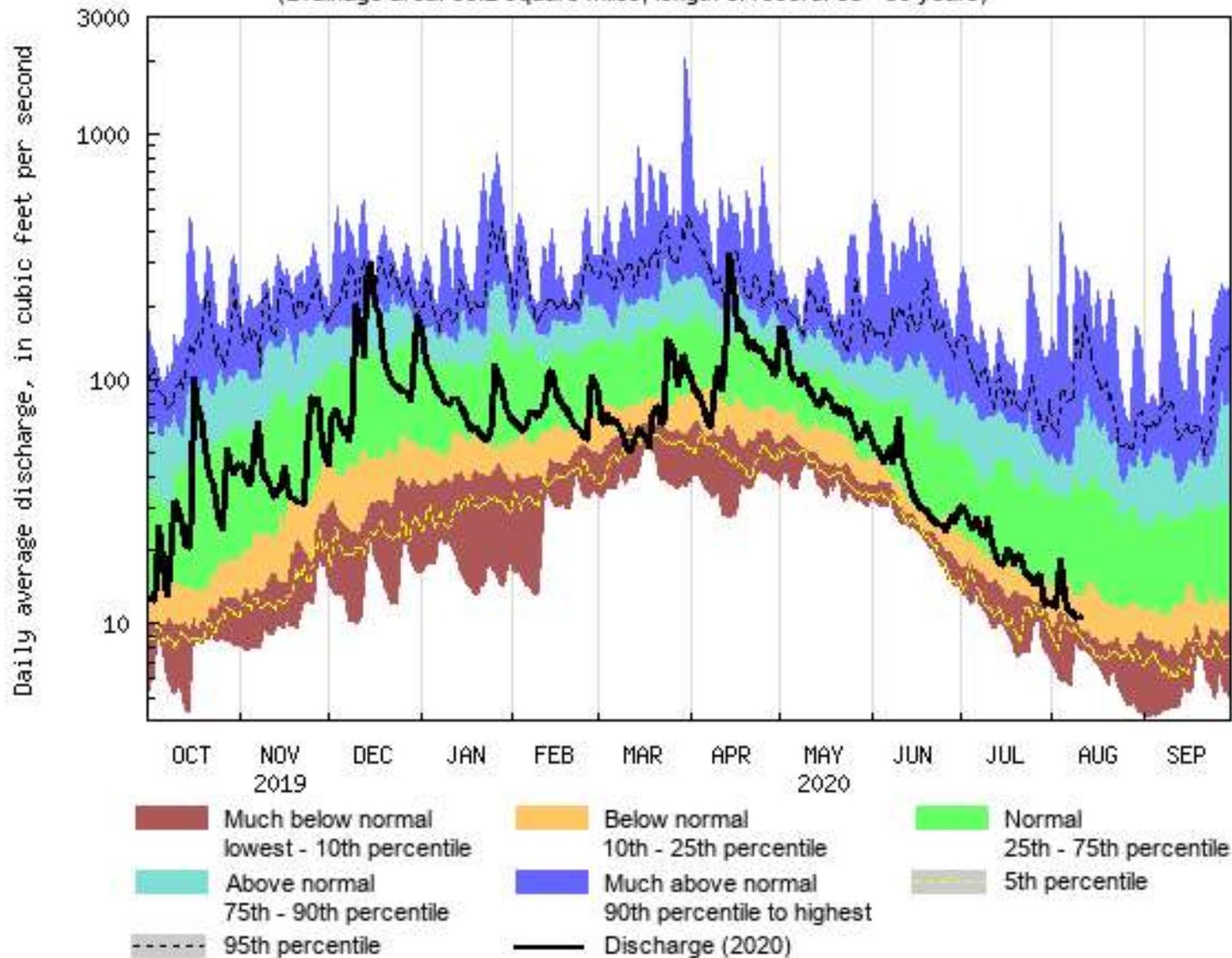
USGS 01117500 PAWCATUCK RIVER AT WOOD RIVER JUNCTION, RI
(Drainage area: 100 square miles, length of record: 79 - 80 years)



USGS WaterWatch

Last updated: 2020-08-12

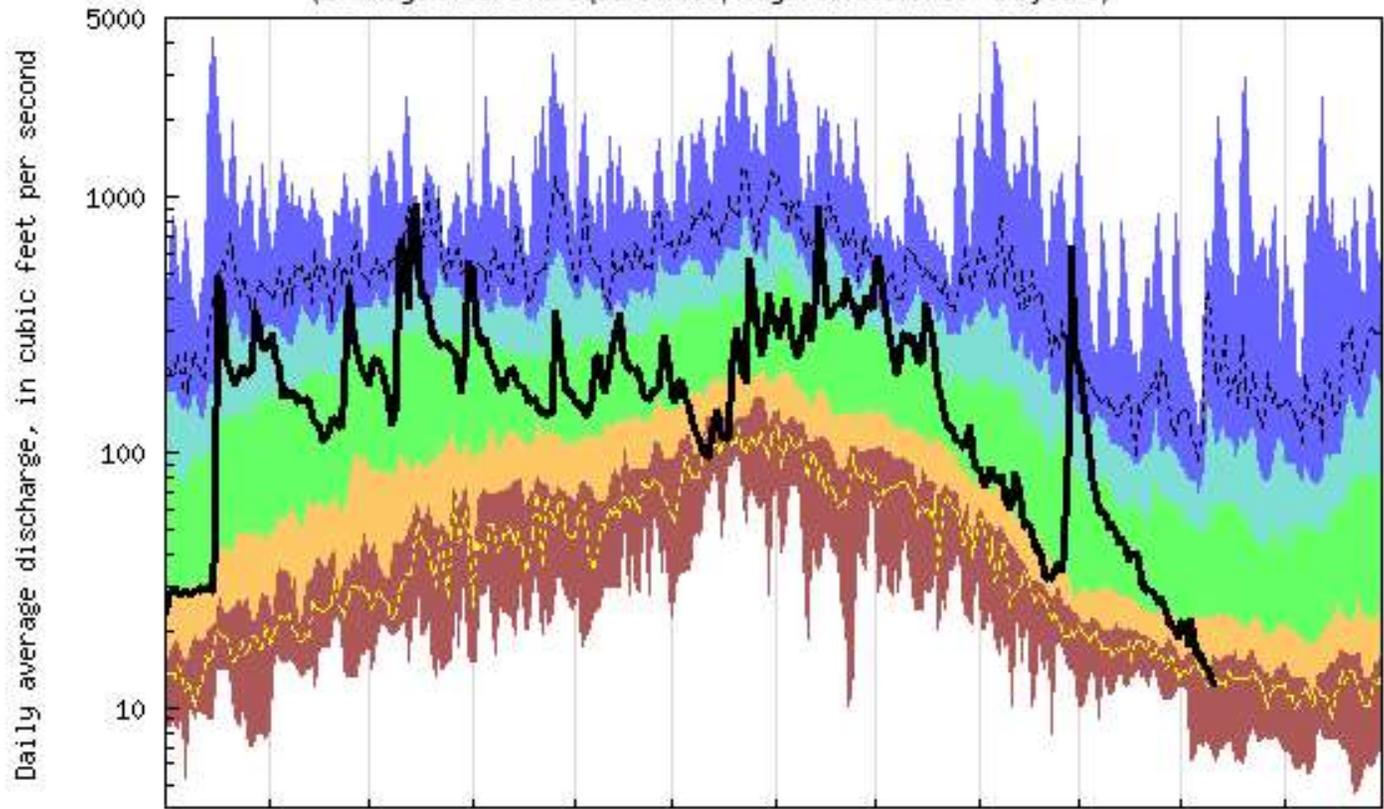
USGS 01117800 WOOD RIVER NEAR ARCADIA, RI
(Drainage area: 35.2 square miles, length of record: 55 - 56 years)



USGS WaterWatch

Last updated: 2020-08-12

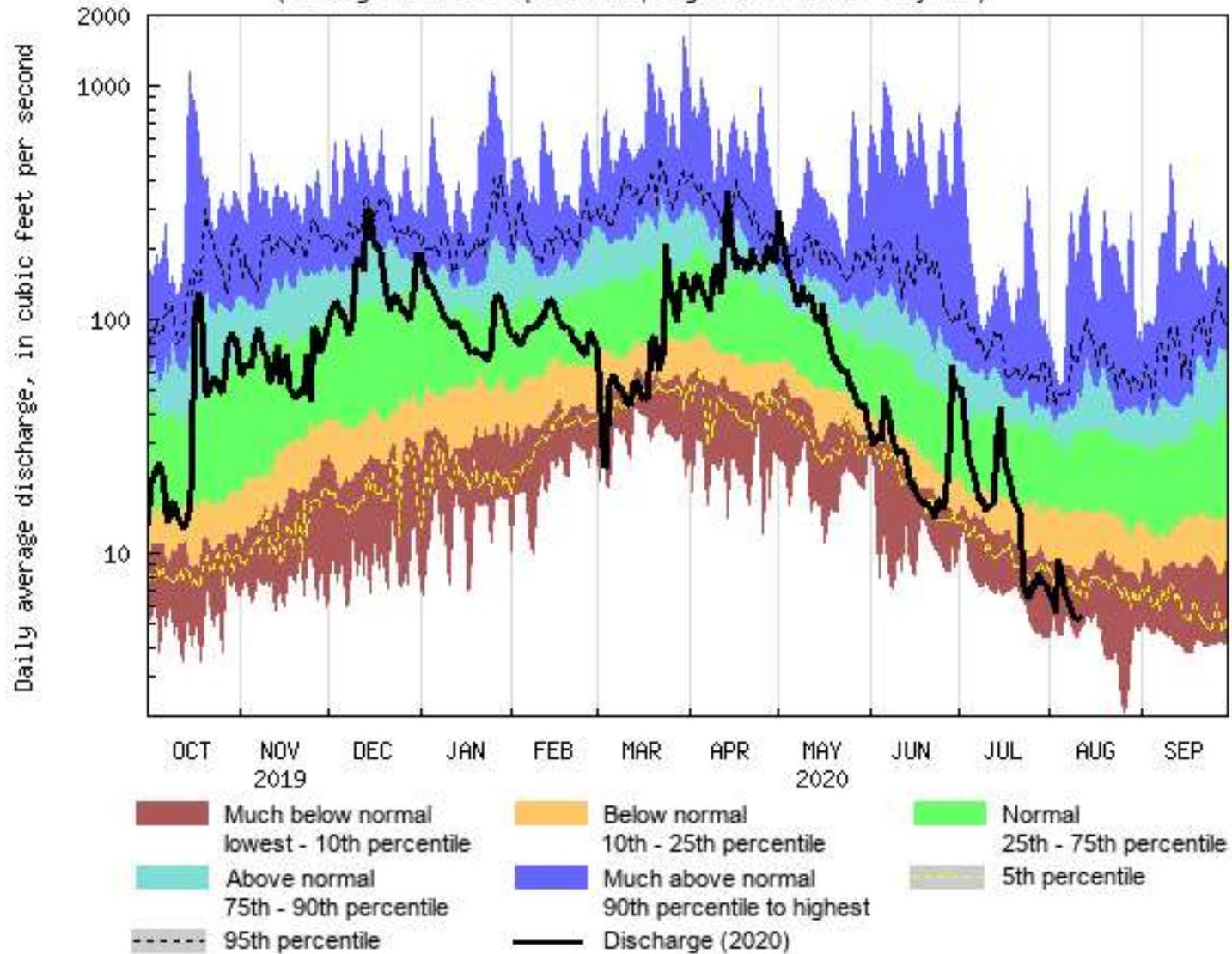
USGS 01111500 BRANCH RIVER AT FORESTDALE, RI
(Drainage area: 91.2 square miles, length of record: 80 - 81 years)



USGS WaterWatch

Last updated: 2020-08-12

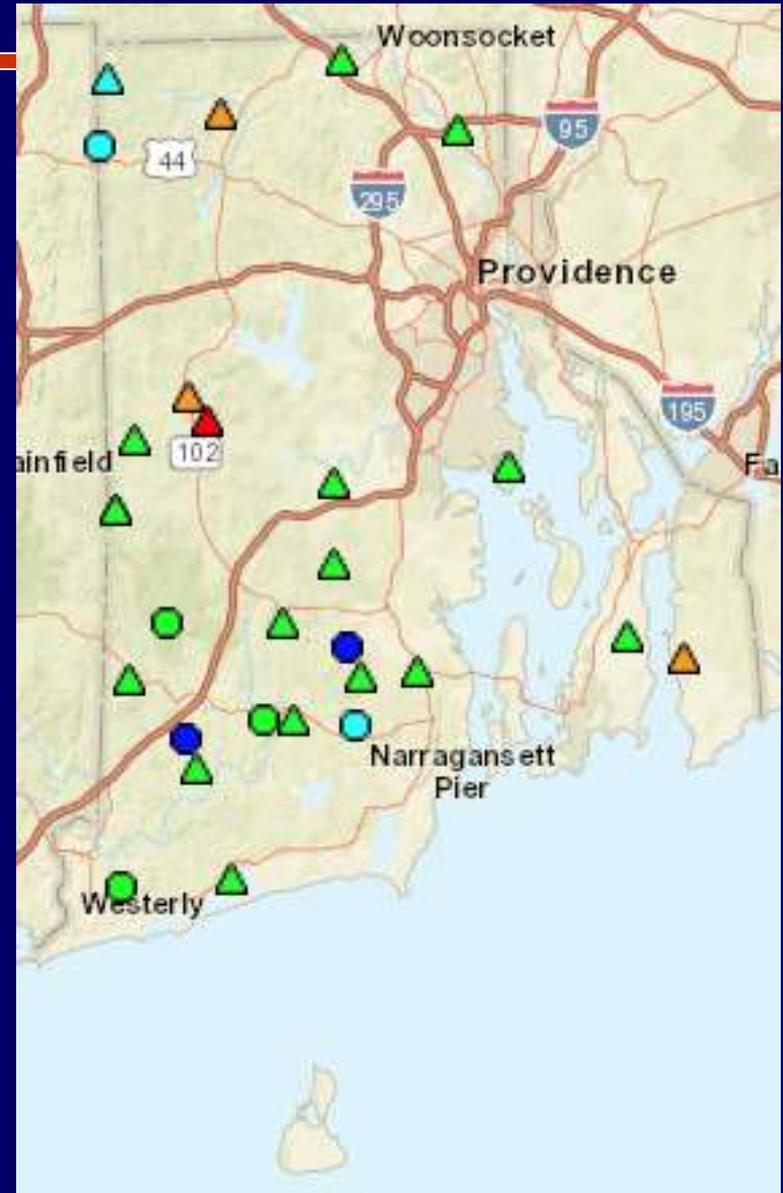
USGS 01114500 WOONASQUATUCKET RIVER AT CENTERDALE, RI
 (Drainage area: 38.3 square miles, length of record: 78 - 79 years)



USGS WaterWatch

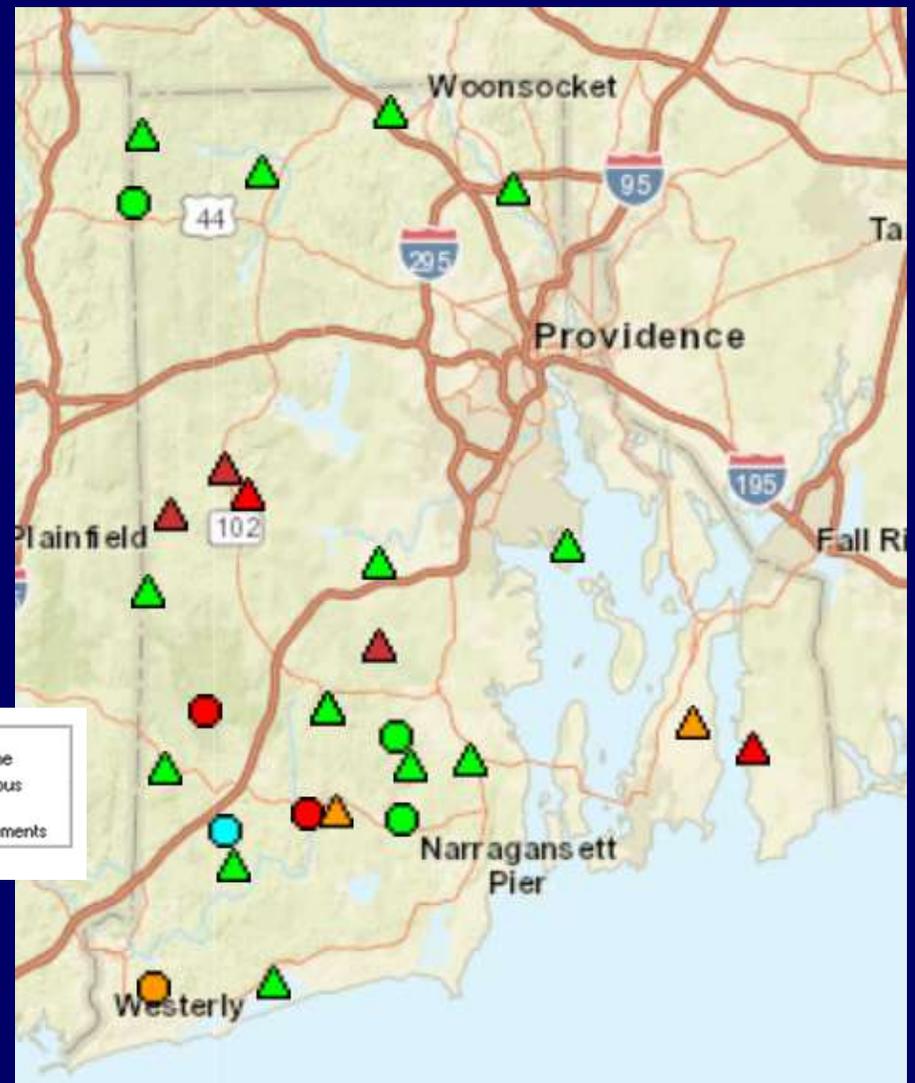
Last updated: 2020-08-12

GW Conditions Late June/Early July, 2020



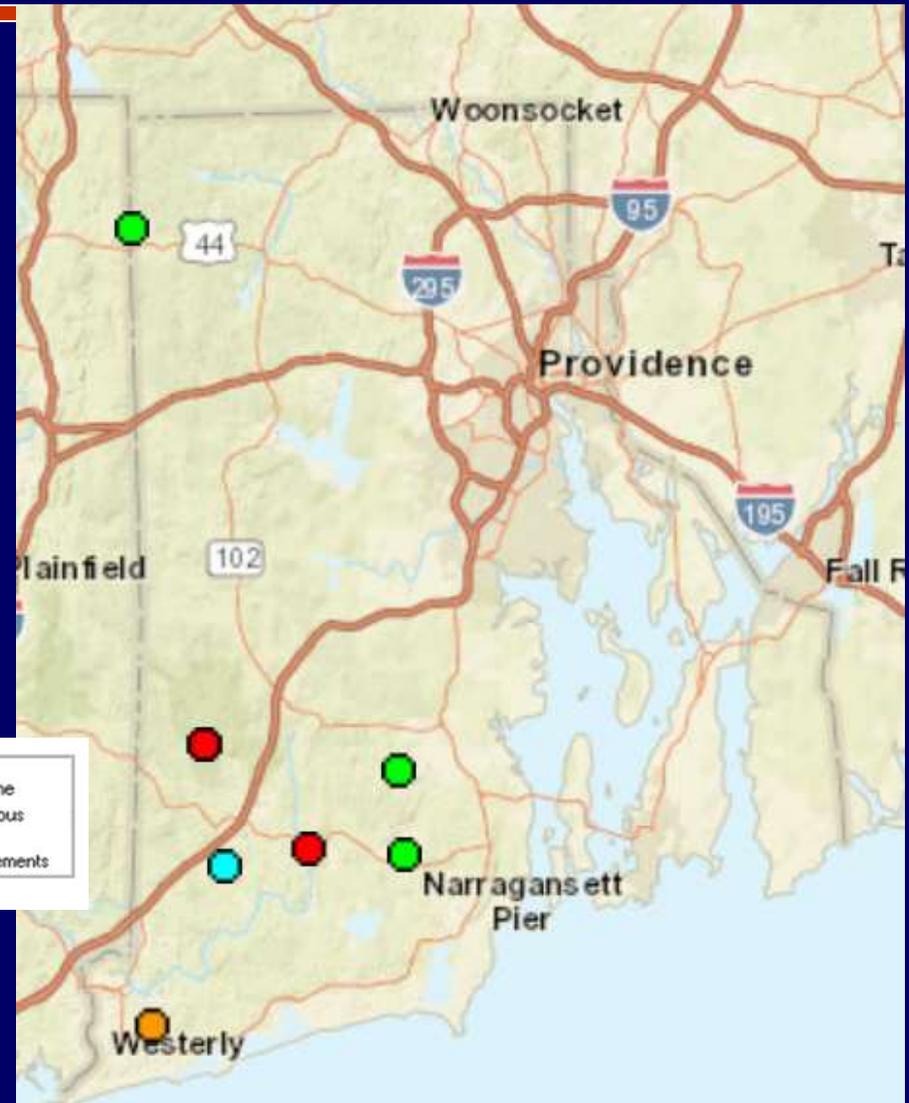
Explanation - Percentile classes								
●	●	●	●	●	●	●	●	
New Low	<10	10-24	25-75	76-90	>90	New High	Not Ranked	
	Much Below Normal	Below Normal	Normal	Above Normal	Much Above Normal			◇ Real Time
								□ Continuous
								△ Periodic Measurements

GW Conditions Late July, 2020



Explanation - Percentile classes								◇ Real Time	□ Continuous	△ Periodic Measurements
●	●	●	●	●	●	●	●			
New	<10	10-24	25-75	76-90	>90	New	Not			
Low	Much Below Normal	Below Normal	Normal	Above Normal	Much Above Normal	High	Ranked			

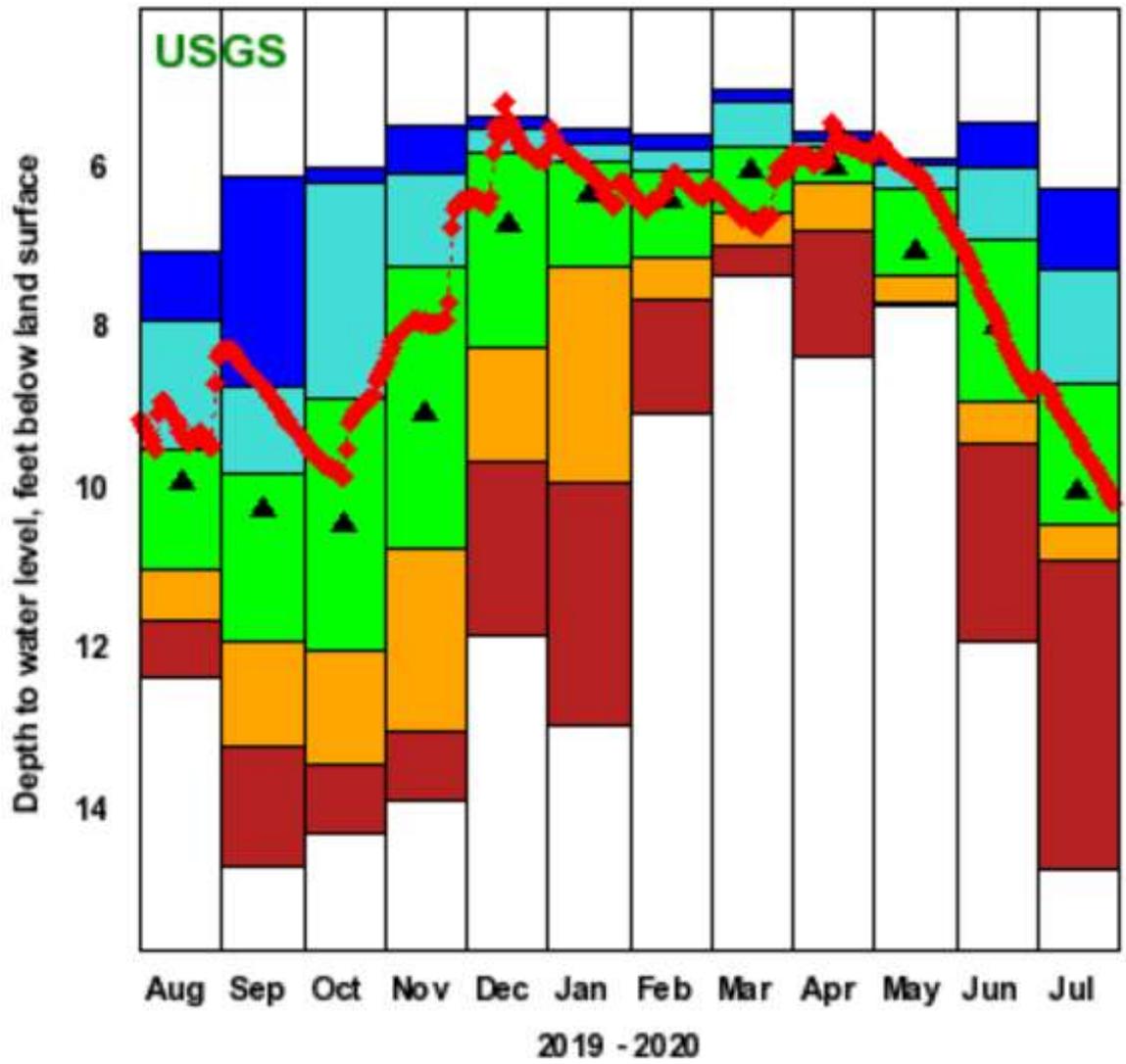
Real-time GW Conditions – July 31, 2020



Explanation - Percentile classes							
●	●	●	●	●	●	●	●
New	<10	10-24	25-75	76-90	>90	New	Not
Low	Much Below Normal	Below Normal	Normal	Above Normal	Much Above Normal	High	Ranked

○	Real Time
□	Continuous
△	Periodic Measurements

415546071474701 - RI-BUW 395 BURRILLVILLE, RI



Plot created 07/30/20 20:27

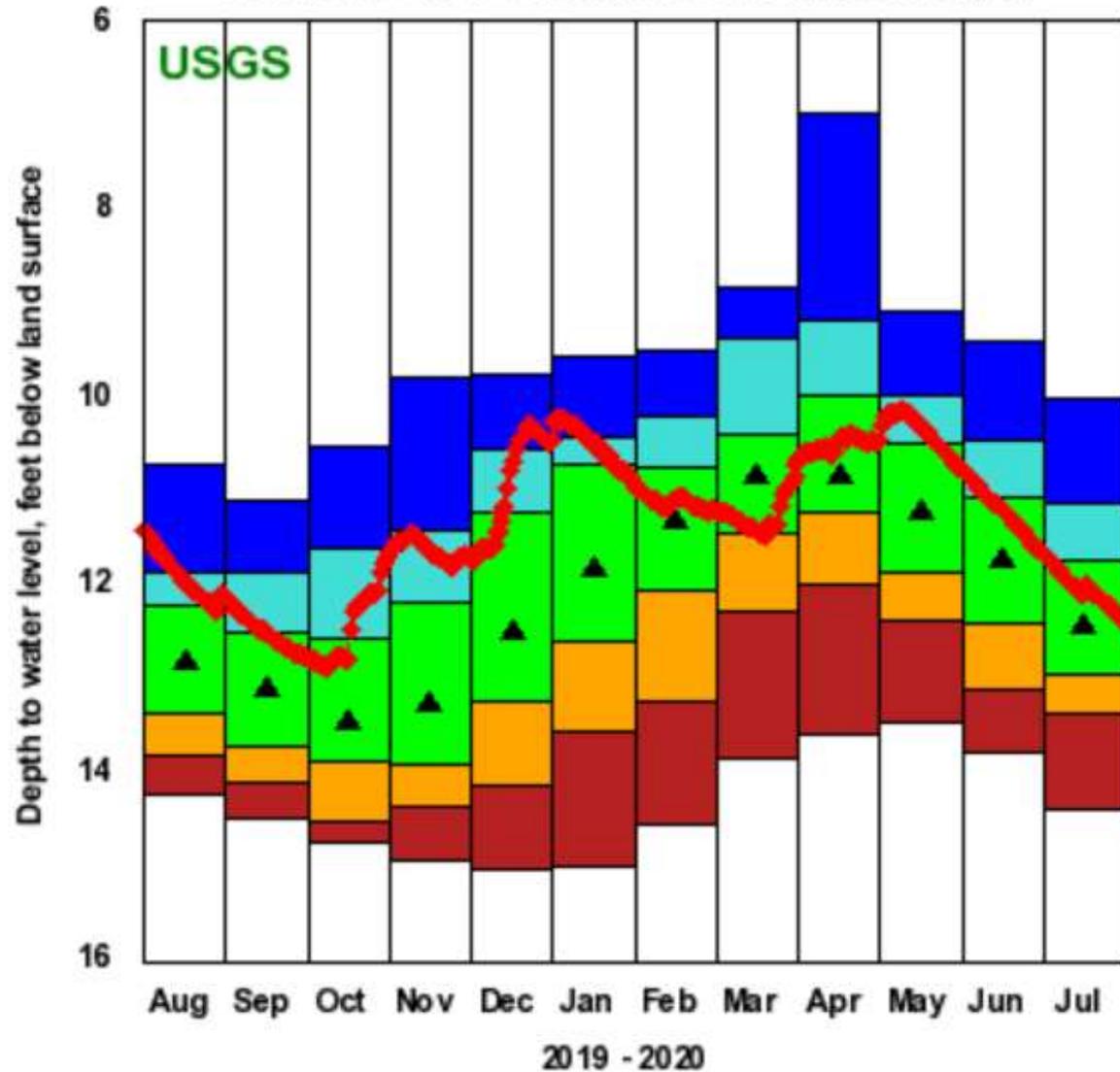
Explanation - Percentile Classes

◆ Data Point

● <10
● 10 - 24
● 25 - 75
● 76 - 90
● >90

▲ Monthly Median

412918071321001 - RI-SNW 6 SOUTH KINGSTOWN, RI

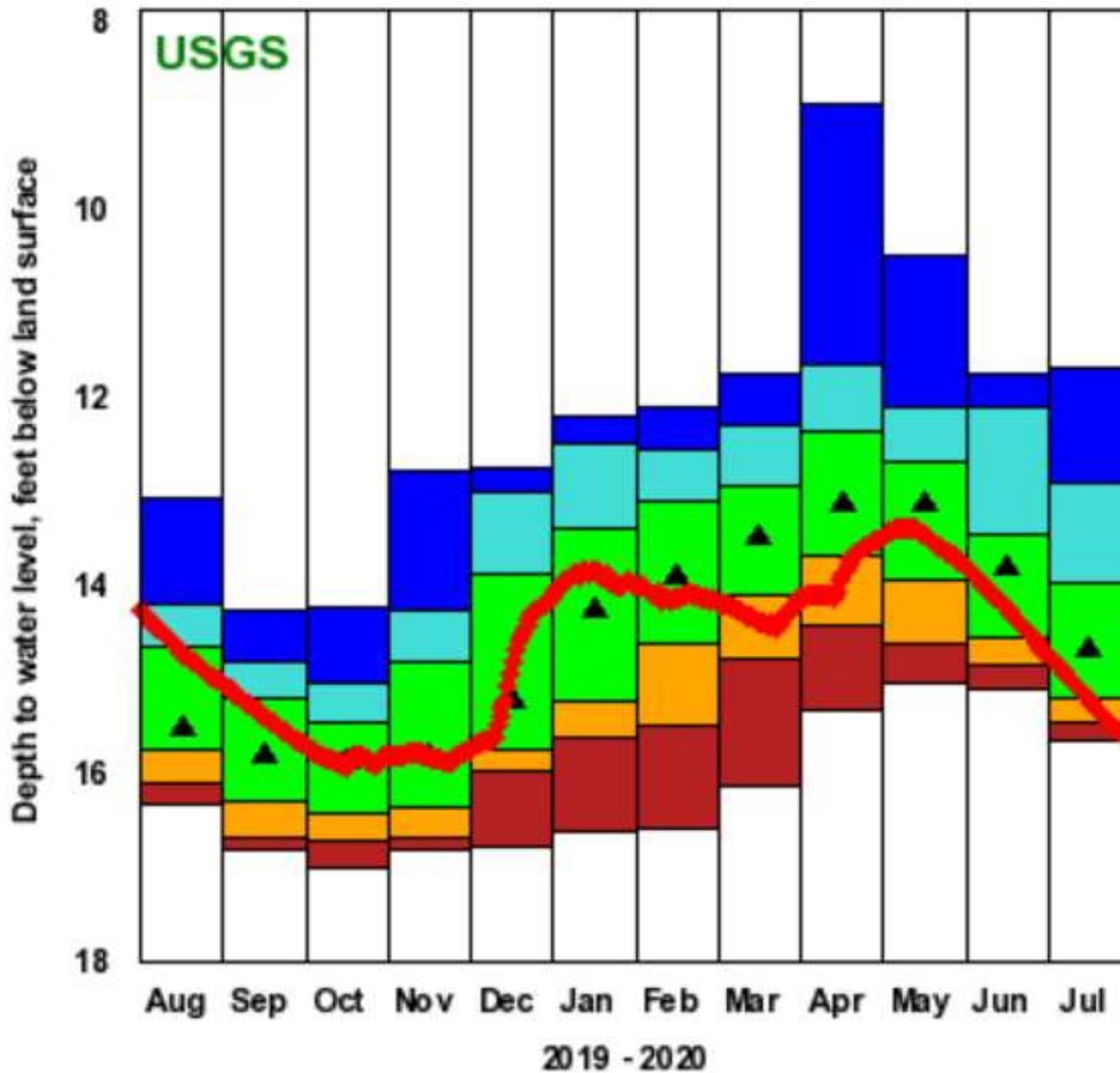


Plot created 07/30/20 20:27

Explanation - Percentile Classes



413358071433801 - RI-EXW 475 EXETER, RI

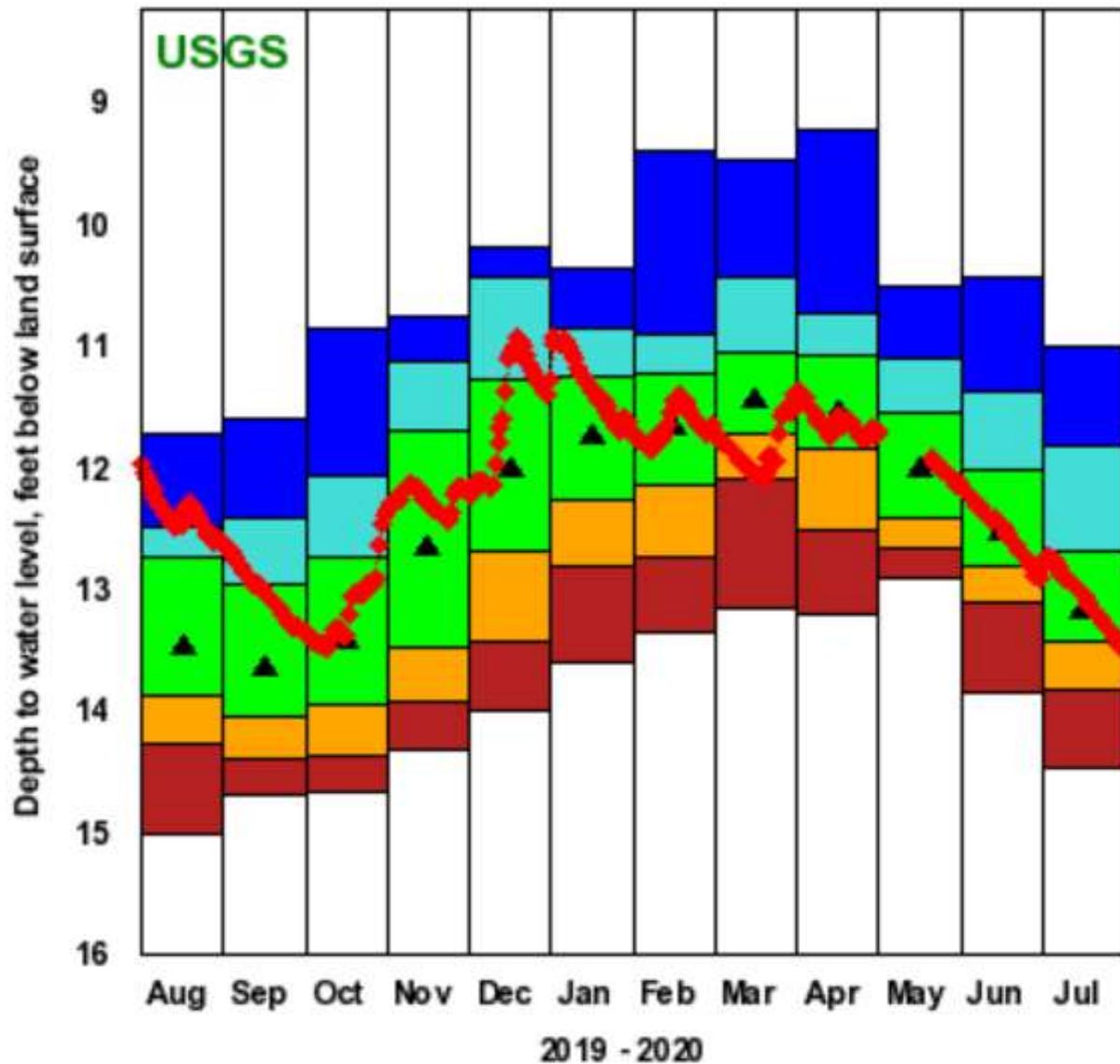


Plot created 07/30/20 20:27

Explanation - Percentile Classes



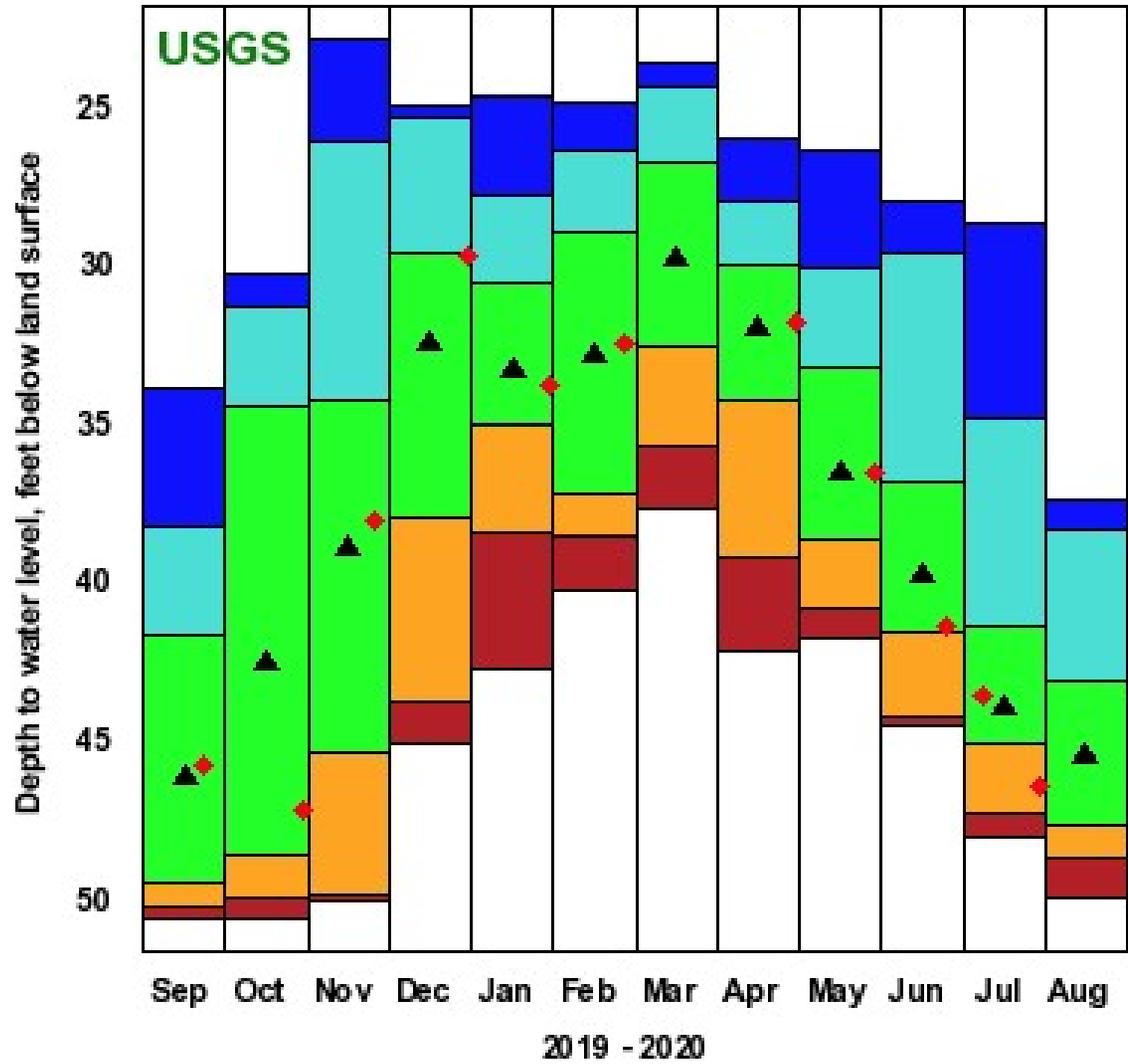
41215407 1462901 - RI-WEW 522 WESTERLY, RI



Explanation - Percentile Classes



413325071152401 - RI-POW 551

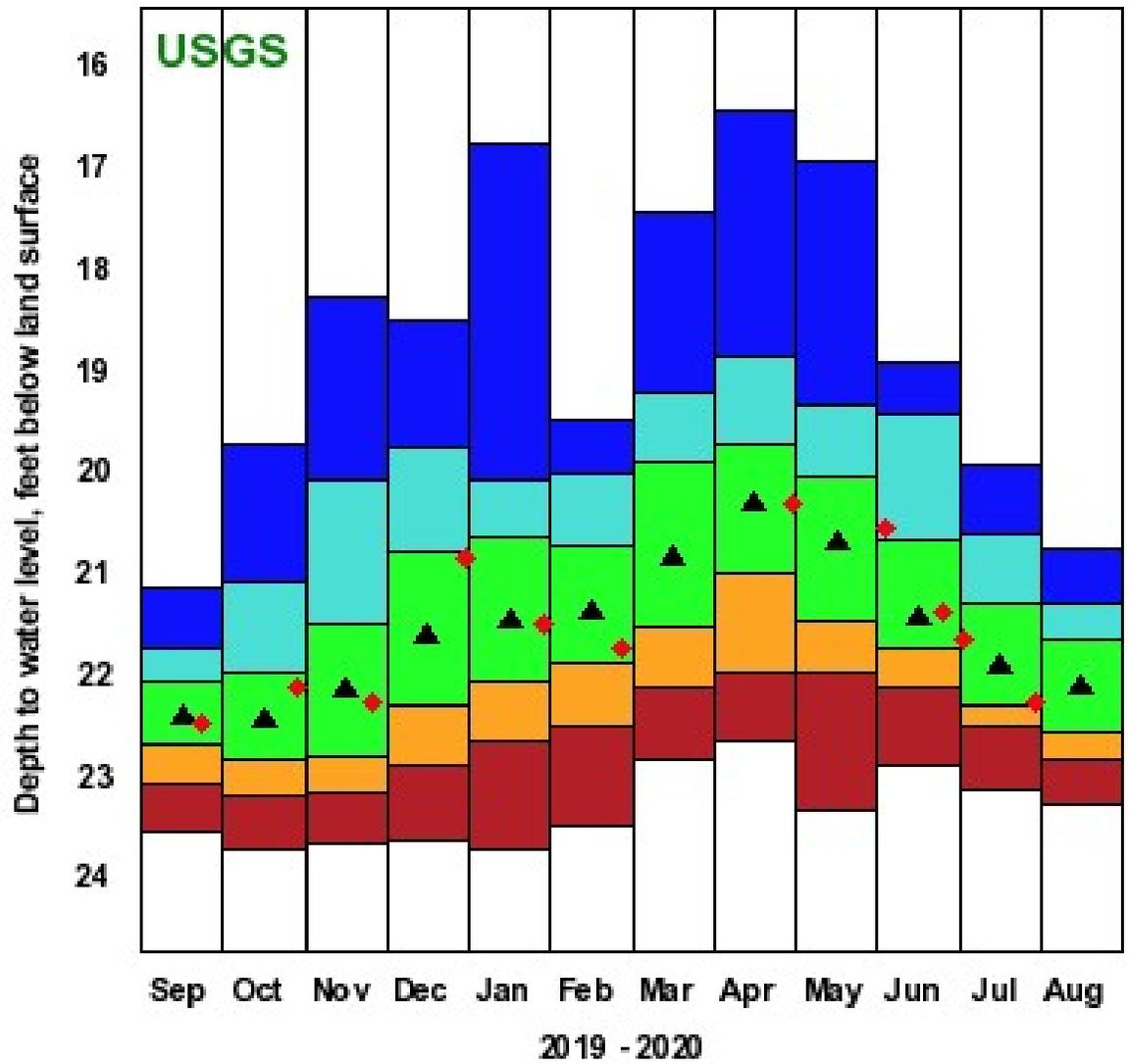


Pbt created 08/11/20 20:11

Explanation - Percentile Classes

- ◆ Data Point
- < 10
- 10 - 24
- 25 - 75
- 76 - 90
- > 90
- ▲ Monthly Median

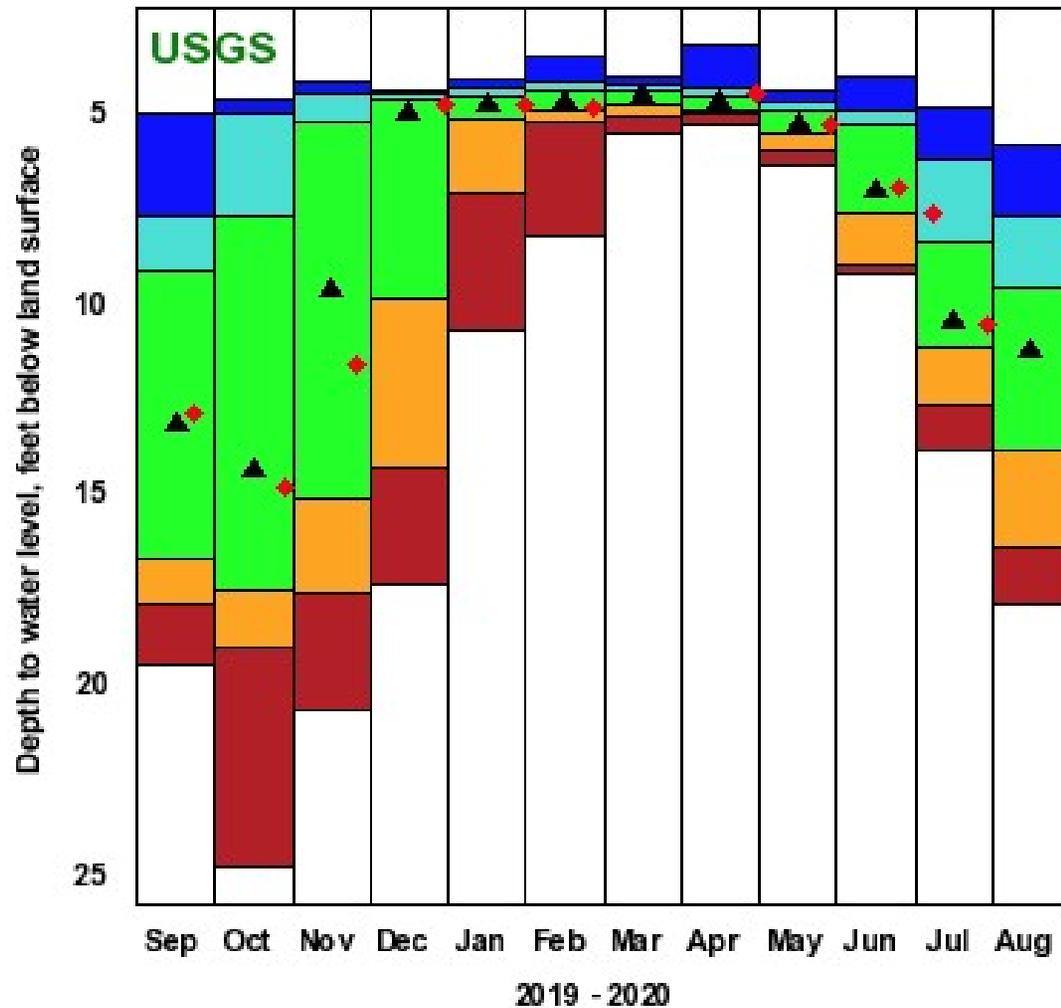
414022071332801 - RI-COW 411



Explanation - Percentile Classes

- ◆ Data Point
- < 10
- 10 - 24
- 25 - 75
- 76 - 90
- > 90
- ▲ Monthly Median

414 10607 122390 1 - RI-WC W 59



Plot created 08/11/20 20:11

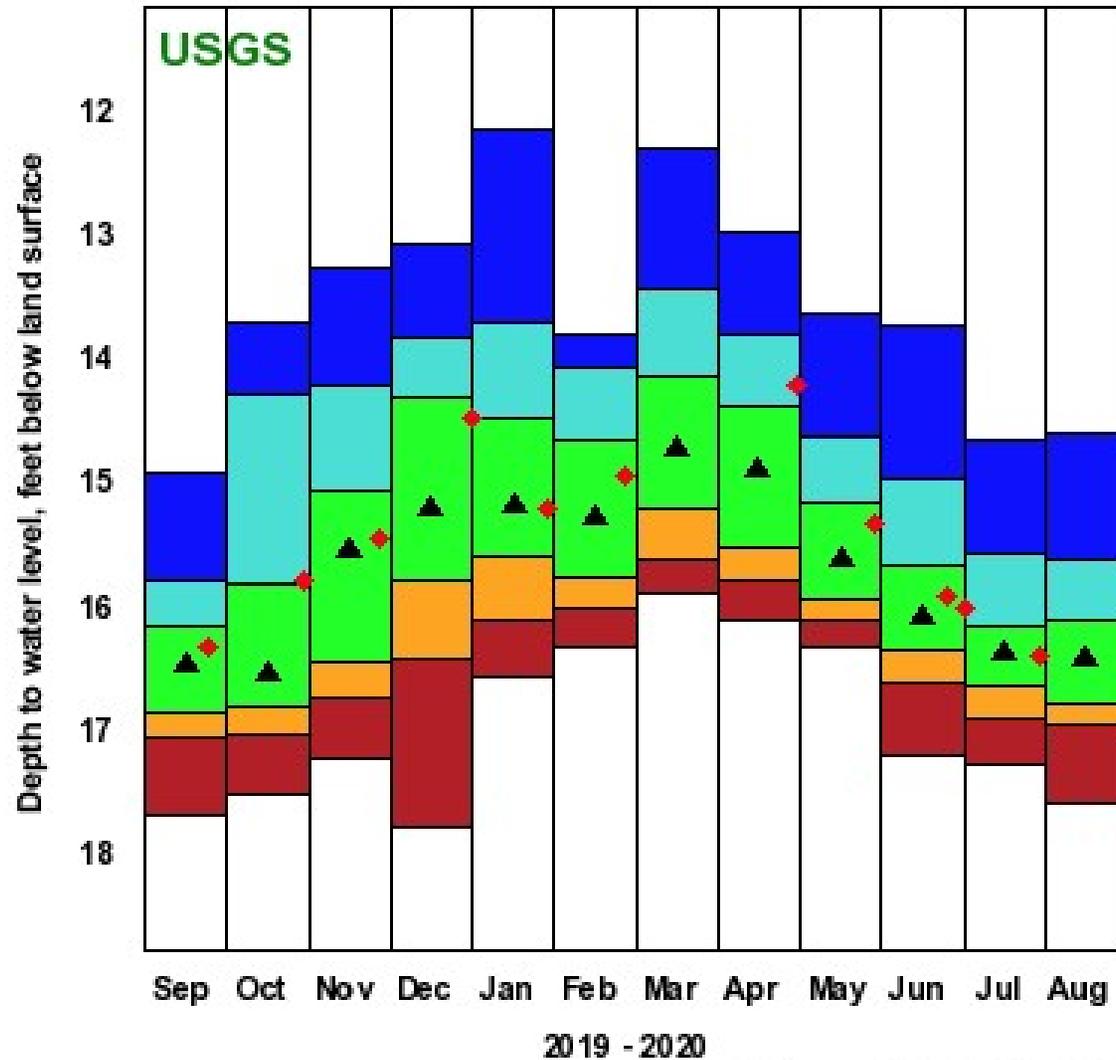
Explanation - Percentile Classes

◆ Data Point

● < 10 ● 10 - 24 ● 25 - 75 ● 76 - 90 ● > 90

▲ Monthly Median

41390707 1465001 - RI-WGW 181



Plot created 08/11/20 20:11

Explanation - Percentile Classes



Table 2, Rhode Island Drought Indices and Phases

Drought Phase	Palmer Drought Index +	Crop Moisture Index	Precipitation +	Ground Water** +	Stream flow +	Reservoirs**
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"Normal" is defined as the statistical average of the data for the period of record. Percentages for precipitation are relative to normal.

Summary: Streamflow

- Based on the State Guide Plan 721
 - Drought advisory calls for three consecutive months of below normal streamflow
 - The trigger has not been met.

Summary: Ground Water

- Based on the State Guide Plan 721
 - Drought advisory calls for two out of three months of below normal water levels
 - The only region in Rhode Island that meets the trigger is Central West
 - The entire state, as a whole, does not meet the trigger for a drought advisory